FIG. 1

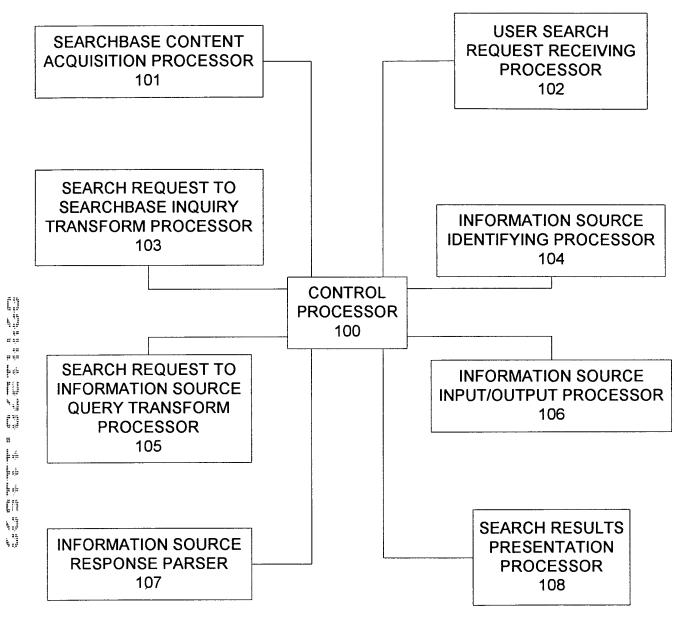
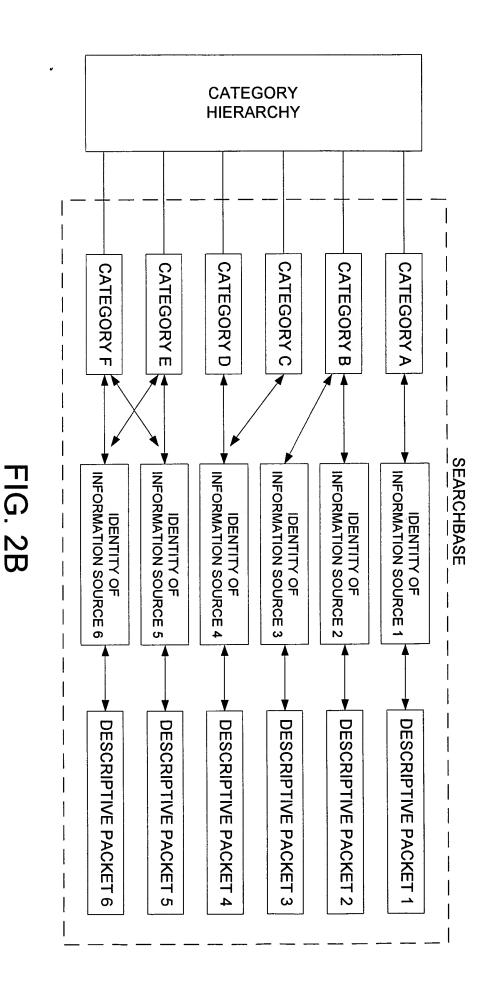


FIG. 2A



books

#### Categories

#### <u>Vendor Associated</u> <u>With Information</u> <u>Source</u>

```
apparel ......Alpha
apparel-shoe ......Beta
apparel-shoe-boy
apparel-shoe-girl
apparel-shoe-men
apparel-shoe-women
apparel-shoe-athletic-hiking
apparel-shoe-athletic-riding
apparel-shoe-athletic-running
apparel-shoe-athletic-tennis
apparel-shoe-casual
apparel-shoe-dress
apparel-shoe-elevator
apparel-shoe-formal
apparel-shoe-formal-antique
apparel-shoe-sandal
apparel-shoe-slipper
apparel-shoe-slipper-ballet
apparel-shoe-slipper-bedroom
apparel-shoe-slipper-glass
apparel-sleepwear
```

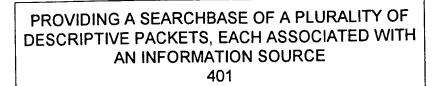
FIG. 3A

#### <u>Categories</u>

### Vendor(s) Associated With Information Source

apparelAlpha,	Beta,	Gamma
apparel-shoeAlpha,	Beta,	Gamma
apparel-shoe-boyAlpha,	Beta	
apparel-shoe-girlAlpha,	Beta	
apparel-shoe-menAlpha,	Beta	
apparel-shoe-womenAlpha,	Beta	
apparel-shoe-athleticAlpha,	Beta,	Gamma
apparel-shoe-athletic-hikingAlpha,	Beta,	Gamma
apparel-shoe-athletic-ridingAlpha,	Beta,	Gamma
apparel-shoe-athletic-runningAlpha,	Beta,	Gamma
apparel-shoe-athletic-tennisAlpha,	Beta,	Gamma
apparel-shoe-casualAlpha,	Beta	
apparel-shoe-dressAlpha,	Beta	
apparel-shoe-elevatorAlpha,	Beta	
apparel-shoe-formalAlpha,	Beta	
apparel-shoe-formal-antiqueAlpha,	Beta	
•		
•		
•		
apparel-shoe-sandalAlpha,	Beta	
apparel-shoe-slipperAlpha,	Beta	
apparel-shoe-slipper-balletAlpha,	Beta	
apparel-shoe-slipper-bedroomAlpha,	Beta	
apparel-shoe-slipper-glassAlpha,	Beta	
apparel-sleepwearAlpha		
•		

books



RECEIVING FROM A USER A SEARCH REQUEST SPECIFYING SEARCH CRITERIA 402

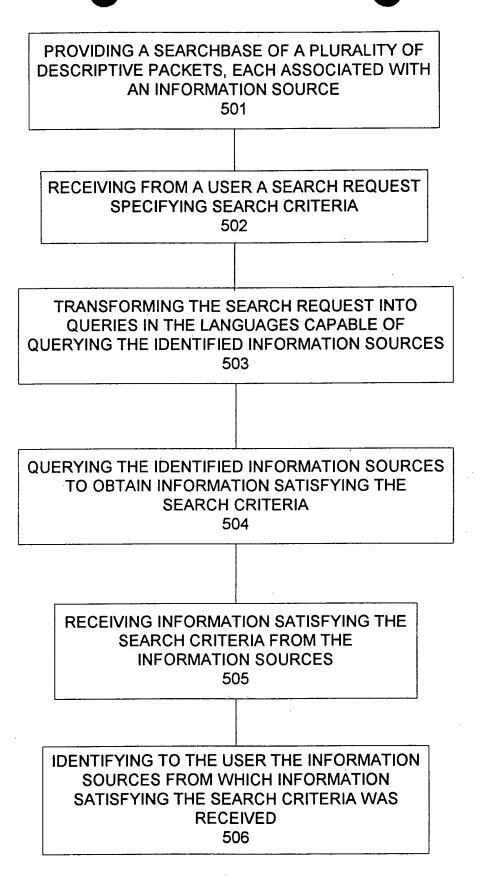
TRANSFORMING THE SEARCH REQUEST INTO AN INQUIRY CAPABLE OF SEARCHING THE SEARCHBASE 403

SEARCHING THE SEARCHBASE TO IDENTIFY
INFORMATION SOURCES WHICH POTENTIALLY
COULD SATISFY THE SEARCH CRITERIA
404

TRANSFORMING THE SEARCH REQUEST INTO QUERIES IN THE LANGUAGES CAPABLE OF QUERYING THE IDENTIFIED INFORMATION SOURCES 405

QUERYING THE IDENTIFIED INFORMATION SOURCES
TO OBTAIN INFORMATION SATISFYING THE
SEARCH CRITERIA
406

RECEIVING INFORMATION SATISFYING THE SEARCH CRITERIA FROM THE INFORMATION SOURCES 407



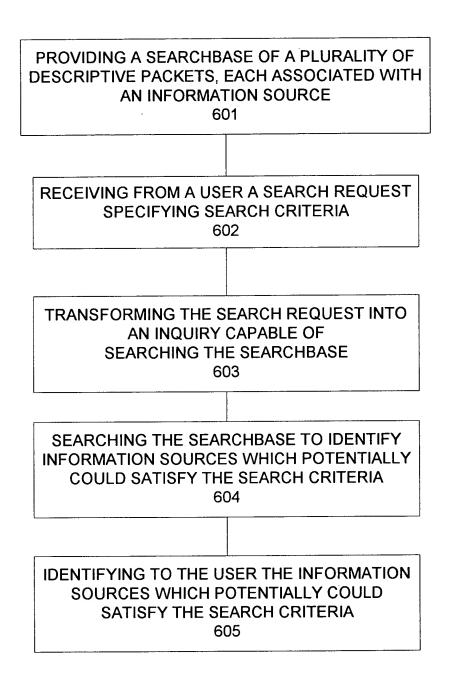


FIG. 6

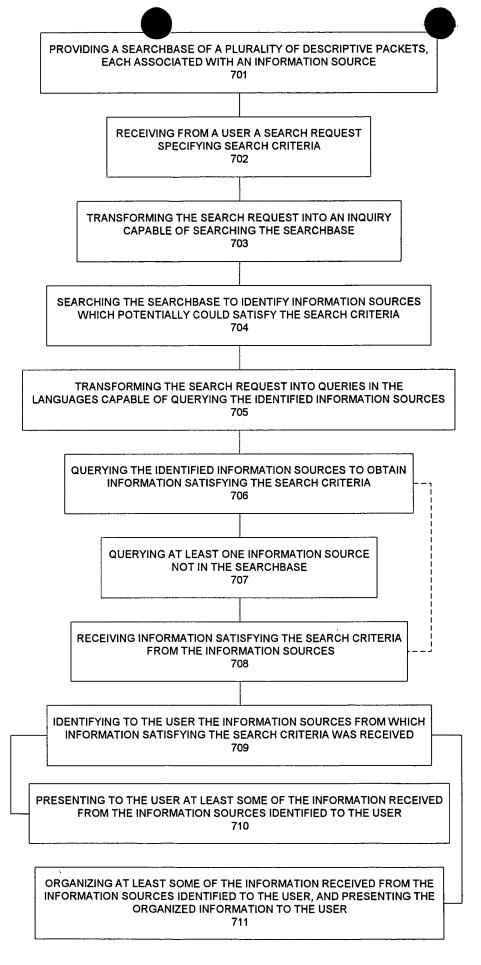
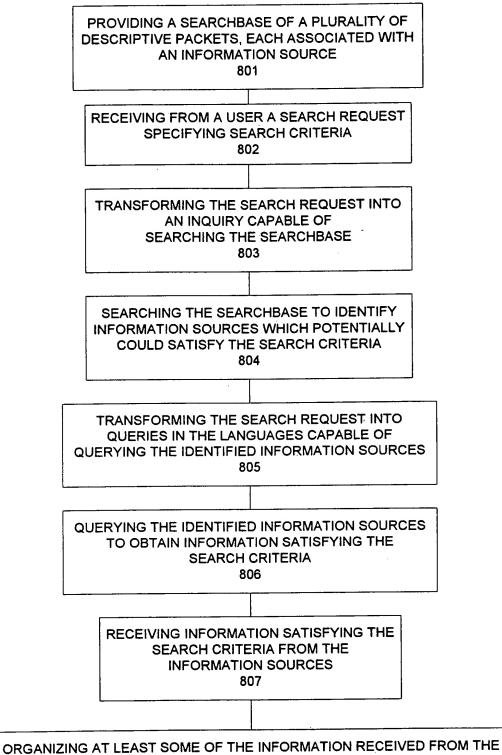


FIG. 7



INFORMATION SOURCES IDENTIFIED TO THE USER, AND PRESENTING THE
ORGANIZED INFORMATION TO THE USER
808

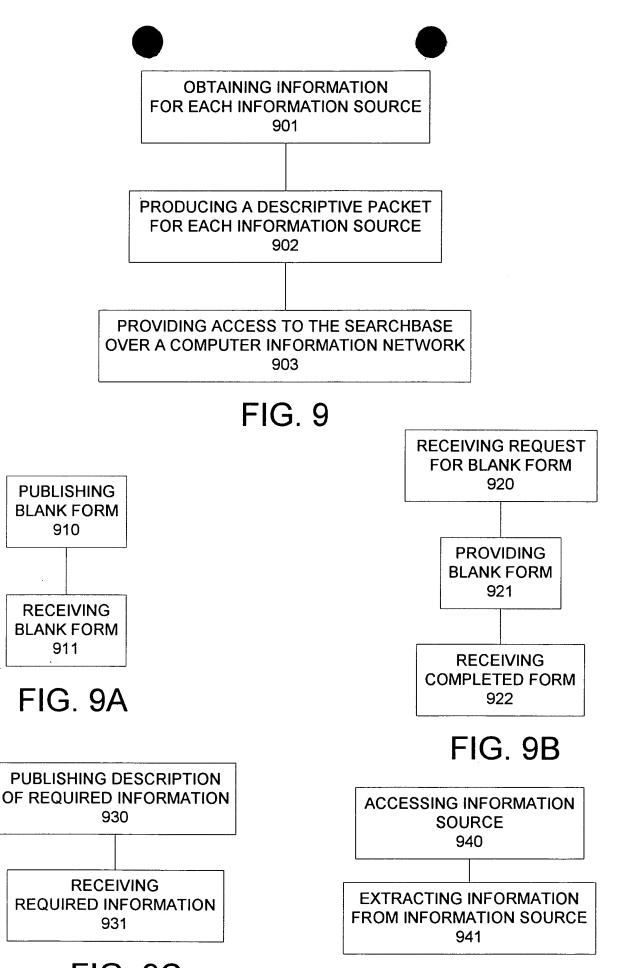
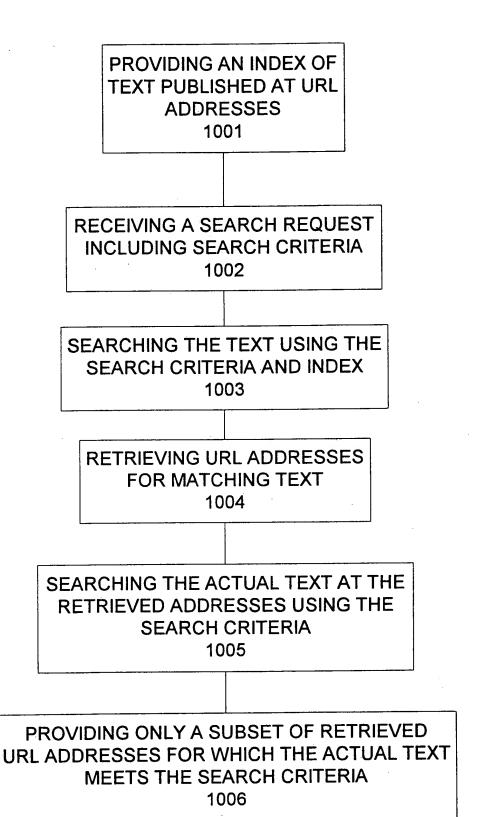


FIG. 9C FIG. 9D



```
apparel
      shoe
           boy, girl, men, women
           athletic, casual, dress, elevator, formal, work
           Gucci, Nike, Nine West, Reebok
           boot, high-heel, loafer, sandal, slipper
                 Expansions under athletic, formal, and slipper are:
                 athletic
                      hiking, riding, running, tennis
                 formal
                      antique, costume, dress, modern
                 slipper
                      ballet, bedroom, glass
       sleepwear
Ĺħ
 books
```

FIG. 11A

Vendor	Description	Price	Other Attributes	Product ID
alpha	boot	\$120	grey	A0001, grey boots
	men's dress	\$150	black	A0002, wonderful dress shoe in black
	men's dress	\$100	brown	A0003, men's dress shoe in brown
	women's loafer	\$60	burgandy	A0004, women's loafer in burgandy
	women's slipper	\$30	white	A0005, women's slipper in white
	dress	\$75	black, sizes 9-12	B0001, dress shoes, various sizes, black
beta	dress			B0002, dress shoes, various sizes, brown
beta	men's formal	\$95	black, sizes 7-12	B0003, formal shoe for men
beta	running	\$40	white	B0004, white running shoe
beta		\$35	white	B0005, white tennis shoe for men
		\$120		C0001, riding shoes
	running	\$35	Nike	C0002, Nike running shoe
		\$40	Reebok	C0003, Reebok running shoe
		\$45		C0004, generic tennis shoe
		\$140		C0005, specialty shoe/boot: waders
		FI	G. 11B	
	alpha alpha alpha alpha alpha beta beta beta beta	alpha boot alpha men's dress alpha men's dress alpha women's loafer alpha women's slipper beta dress beta dress beta men's formal beta running beta men's tennis gamma running gamma running gamma running	alpha         boot         \$120           alpha         men's dress         \$150           alpha         men's dress         \$100           alpha         women's loafer         \$60           alpha         women's slipper         \$30           beta         dress         \$75           beta         men's formal         \$95           beta         running         \$40           beta         men's tennis         \$35           gamma         riding         \$120           gamma         running         \$35           gamma         running         \$40           gamma         running         \$40           gamma         running         \$40           gamma         tennis         \$45           gamma         waders         \$140	alpha boot \$120 grey alpha men's dress \$150 black alpha men's dress \$100 brown alpha women's loafer \$60 burgandy alpha women's slipper \$30 white beta dress \$75 black, sizes 9-12 beta dress \$75 brown, sizes 7-12 beta men's formal \$95 black, sizes 7-12 beta men's tennis \$35 white gamma running \$120 gamma running \$120 gamma running \$35 Nike Reebok gamma tennis \$45



#### FIG. 12A

# Add InfoSource

	Searchtrait home About Us Add InfoSource	Add Your Site Submitting this form				
		and allow users to se				
	Name:					)
	Company:					/
	Address:					> 1201
	Phone:			· · · · · · · · · · · · · · · · · · ·		100-1
	Fax:					\
	E-mail:					)
100		☐ Send me every query.				
المنه	you want sent to you?	Do not send me any q	ueries EXCEPT those	about: (choose th	ne categories for queries) (	click
	·	"sub-menus" to see the sub (For descriptions and ot		tegories)		
		Apparel [	☐ Flowers & Gifts	☐ Movies & V	/ideo Toys & Game	
	12.03	Books	Food & Drink	Music	Travel	<u></u>
The state of the s	ر کسر					<b>=</b>
in in fin	L	Computers	Health & Beauty	Office	more categories	_
p 49	`	Electronics	Home & Garden	Sports & Fi		
F.		We need to know how to funderstand your responses		ou, how to commu	unicate with you, and how t	0
** <u>*</u>		☐ I'll tell you now by fill		nd F now.	7 1210	
C.J	Choose One:	☐ I'll tell you later. I'll fil			act me.	
s Le		(click here for instruction		•		
<b> </b>					unicate, and to extract informs of the your site. (click here	
<b>!</b>		further details.)			g ) o <u>(</u>	
		□ c/c++	☐ MQSeries		☐ URL	
# 12 m	A. Language used	1 0000.	☐ Pascal		☐ VBScript	1204
	to query your site:		☐ Python		☐ XML	
		☐ Java	☐ TCL		more	)
	B. Template of					~ 1205
	Query Language:					120
	C. Protocol used for sending to	☐ HTTP ☐ HTT	PS 🗆 FTP 🗀	TCP/IP 🗆 e	e-mail <u>more</u> — )	206
	you:				<u> </u>	, , ,
	D. Protocol used for receiving from	☐ HTTP ☐ HTT	PS 🗆 FTP 🗆	TCP/IP 🔲 e	e-mail <u>more</u> ~ 12	107
	you:			ICI/II LIC	-man more	,
		□ c/c++	☐ Pascal		☐ VBScript	$\neg \neg \gamma$
	E. Language used		☐ Perl		☐ VBA	7 1208
	by your site to respond:		☐ Python		☐ XML	
	-	☐ Java	☐ TCL		more	)
	F. Template of					1209
	response langauge:					ا سرا
	<b>.</b>	Submit Thank you	Clear		Powered by Searc	chcraft <sup>SM</sup>

This form shows you the sub-categories of the ones you selected on the previous page. Choose the categories for queries. (click "sub-menus" to see the sub-menus of selected categories)  (for descriptions and other help, click here)								
Apparel:	☐ Dresses	☐ Formalwear	Jewelry	$\gamma$				
Outerwear	Pants	Shoes	☐ Sleepwear					
☐ Specialty	Sportswear	☐ Suits	☐ Underwear	> 1211				
☐ Uniforms	☐ Watches	☐ Wedding	☐ Work	(				
		<u>more</u>	sub-menus					
Submit Thank you.	Clear	Powered	by Searchcraft <sup>SM</sup>	/				

FIG. 12B

the state of the s

About U	the categories for		ib-menus" to see th	selected on the previous sub-menus of selected	
Shoes:	□ boy	☐ girl	☐ men	☐ women	$\cap$
	☐ athletic	☐ casual	☐ dress	☐ elevator	
	☐ formal	□ work			
	□ boot	☐ high heel	□ loafer	☐ sandal	1010
	☐ slipper				> 1212
	☐ brand name	es			(
	price range	es			
			more	sub-menus	)
Submit	Thank you.	Clear	Powe	ered by Searchcraft <sup>SI</sup>	м

FIG. 12C



tion Source	ce
ite database.	
1	
	· ·
choose the catego	ories for queries) (click
ovies & Video	☐ Toys & Games
usic	☐ Travel
fice	more categories
orts & Fitness	sub-menus
	with you, and how to
v.	
can contact me.	
to communicate, rresponding to yo	and to extract information our site. (click here for
<b>☑</b> UR	ıL
☐ VE	Script
□ X\	Æ.
more	
type= <type></type>	&color= <co< td=""></co<>
P e-mail	more ·
e-mail	<u>more</u>
□ VE	Script

Searchcraft home	Add Your Sit	e As An Info	rmation Sour	ce
	Submitting this form and allow users to s	•		
Name:	Andy Alpha			
Company:	Alpha			
Address:	123 Main St.			
Phone:	(123) 456-7890			
Fax:	(123) 456-7891			
E-mail:	andy@alpha.com			
What queries do you want sent to you?	☐ Send me every query ☐ Do not send me any "sub-menus" to see the su ☐ (For descriptions and of)	queries EXCEPT those a ub-menus of selected cate	about: (choose the cate egories)	gories for queries) (click
	✓ Apparel	☐ Flowers & Gifts	☐ Movies & Video	☐ Toys & Games
	☐ Books	☐ Food & Drink	☐ Music	☐ Travel
	Computers	☐ Health & Beauty	☐ Office	more categories
	☐ Electronics	☐ Home & Garden	☐ Sports & Fitness	sub-menus
Choose One:	We need to know how to understand your response I'll tell you now by find I'll tell you later. I'll following inputs profrom your response. For each of the control of the	es. Iling in A, B, C, D, E, an fill in A, B, C, and D nov tions) vide methods to query yo	nd F now.  v so you can contact me  our site, to communicate	e, and to extract information
	further details.)			
	□ c/c++	☐ MQSeries	Øυ	RL
A. Language used to query your		Pascal		BScript
site:	☐ Corba	☐ Python	x	ML
	☐ Java	☐ TCL	more	
B. Template of Query Language:		a.com/bin/getpro	duct?type= <type< th=""><th>&gt;&amp;color=<co< th=""></co<></th></type<>	>&color= <co< th=""></co<>
C. Protocol used for sending to you:	☑ нттр 🔲 нтт	TPS   FTP   1	ſCP/IP ☐ e-mail	more ·
D. Protocol used for receiving from you:	☑ HTTP ☐ HTT	TPS   FTP   1	ГСР/IР ☐ e-mail	more
	□ C/C++	☐ Pascal	□ v	BScript
E. Language used by your site to		☐ Perl	v	ВА
respond:	☑ Grep	☐ Python	x	ML
	☐ Java	☐ TCL	more	
F. Template of				
response langauge:	SKU:\t{A-Z}*\nT	ype:\t{A-Z}*\nCo	lor:\t{A-Z}*\nP	rice:\${0-9}
inne and e.	Submit Thank you	u. Clear		Powered by Searchcraft



#### FIG. 14A



# Add InfoSource

Search craft home	Add Your Site As An Information Source							
About Us Adolfo Society	Submitting this form will add you to our Searchbase <sup>TM</sup>							
***************************************		and allow users to search your up-to-the-minute database.						
Name:	Betty Beta					-		
Company:	Beta							
Address:	101 San Rafael							
Phone:	415-514-4321							
Fax:	415-514-4322							
E-mail:	betty@beta.com							
What queries do you want sent to you?	☐ Send me every query ☐ Do not send me any "sub-menus" to see the su (For descriptions and of	queries I ıb-menu	s of selected cat		he catego	ories for queries) (click		
	Apparel	☐ Flow	vers & Gifts	☐ Movies & \	Video	☐ Toys & Games		
	☐ Books	☐ Foo	d & Drink	☐ Music		☐ Travel		
	Computers	☐ Hea	Ith & Beauty	Office		more categories		
	☐ Electronics	☐ Hon	ne & Garden	Sports & F	itness	sub-menus		
Choose One:	understand your response  I'll tell you now by fi  I'll tell you later. I'll tell you now by first tell you later. I'll	lling in A fill in A, tions) vide met	B, C, and D now	w so you can con	unicate,	and to extract information our site. (click here for		
	✓ C/C++	I	☐ MQSeries		☐ UF	AT.		
A. Language used	☐ Cobol		Pascal		☐ VE	Script		
to query your site:	☐ Corba		Python		□ XI	ИL		
	☐ Java		☐ TCL		more			
B. Template of Query Language:	call: <type>,<p< th=""><th>rice&gt;,</th><th><color>; c</color></th><th>ode: #inclu</th><th>ıde <s< th=""><th>tdio.h&gt;</th></s<></th></p<></type>	rice>,	<color>; c</color>	ode: #inclu	ıde <s< th=""><th>tdio.h&gt;</th></s<>	tdio.h>		
C. Protocol used for sending to you:	□ нттр □ нтт	TPS [	FTP 🗹	TCP/IP	e-mail	more		
D. Protocol used for receiving from you:	□ НТТР □ НТТ	TPS [	FTP 🗹	TCP/IP	e-mail	more		
	□ C/C++		Pascal		U VI	3Script		
E. Language used by your site to	☑ CSV		Perl					
respond:			Python			vIT		
	☐ Java		☐ TCL		more			
F. Template of	<id>,<descripti< th=""><th>on&gt; <!--</th--><th>rolor&gt; <pri< th=""><th>ce&gt;</th><th></th><th><del></del></th></pri<></th></th></descripti<></id>	on> </th <th>rolor&gt; <pri< th=""><th>ce&gt;</th><th></th><th><del></del></th></pri<></th>	rolor> <pri< th=""><th>ce&gt;</th><th></th><th><del></del></th></pri<>	ce>		<del></del>		
response langauge:	tar, tacseripti	J / NO						
	Submit Thank yo	u. C	lear			Powered by Searchcraft		

Thank you.

Submit

ABOUT Us categories for q	s you the sub-categories of ueries. (click "sub-menus s and other help, click here	to see the sub-menu	on the previous page. Choose the sof selected categories)
Apparel:	☐ Dresses	Formalwear	☐ Jewelry
Outerwear	Pants	✓ Shoes	☐ Sleepwear
☐ Specialty	☐ Sportswear	☐ Suits	☐ Underwear
☐ Uniforms	☐ Watches	☐ Wedding	☐ Work
		more	sub-menus
Submit Thank you.	Clear	Powered b	y Searchcraft <sup>SM</sup>

FIG. 14B

ATTENDED TO THE STATE OF THE ST



3,

#### FIG. 15A



***************************************								
Searcheraft home	Add Your Site	e As An Info	rmation Sou	rce				
About Us Add Info Source	Submitting this form will add you to our Searchbase <sup>TM</sup>							
	_	and allow users to search your up-to-the-minute database.						
Name:	George Gamma							
Company:	Gamma							
Address:	5A Memorial Driv	7e						
Phone:	(617) 789-3456							
Fax:	(617) 789-3457							
E-mail:	george@gamma.com	n						
What queries do	☐ Send me every query	•						
you want sent to	☑ Do not send me any o	queries EXCEPT those		egories for queries) (click				
<b>J</b> 020	"sub-menus" to see the su (For descriptions and o		tegories)					
	Apparel	Flowers & Gifts	☐ Movies & Video	☐ Toys & Games				
	Books	Food & Drink	Music	Travel				
	Computers	Health & Beauty	Office	more categories				
	☐ Electronics	Home & Garden	Sports & Fitness	sub-menus				
	We need to know how to							
	understand your response		ou, now to communicat	e with you, and now to				
	☑ I'll tell you now by fil	lling in A, B, C, D, E, a	nd F now.					
Choose One:			w so you can contact m	e.				
	(click here for instruct		our site to communicat	te, and to extract information				
	from your response. For e							
	further details.)	- I - 160 ·	<u> </u>					
A Languaga usad	□ c/c++	MQSeries	<del></del>	JRL				
A. Language used to query your		Pascal		VBScript				
site:		Python						
	∐ Java	☐ TCL	mor	<u>e</u>				
B. Template of Query Language:	http://www.gamma	a.com/bin/getsho	oes?t= <type>&amp;c=</type>	<color>&amp;p=<p< th=""></p<></color>				
C. Protocol used								
for sending to	☑ HTTP ☐ HTT	PS   FTP	TCP/IP	l more				
you: D. Protocol used								
or receiving from	☑ HTTP ☐ HTT	PS   FTP	TCP/IP	il <u>more</u>				
you:		I D D1	I .	VTDCiA				
E. Language used	C/C++	☐ Pascal☐ Perl		VBScript VBA				
by your site to	☐ Grep	Python	<del></del>	XML				
respond:	☐ Java	☐ TCL	more					
F. Template of		102	1					
response	<id>,<price>,<cd< th=""><th>olor&gt;,<descript:< th=""><th>ion&gt;</th><th></th></descript:<></th></cd<></price></id>	olor>, <descript:< th=""><th>ion&gt;</th><th></th></descript:<>	ion>					
langanga								

Thank you.

Clear

Submit

categor categor	ries for queries	the sub-categories of to click "sub-menus" other help, click here)	to se			e previous page. Choose th elected categories)
Apparel: Acce	essories	Dresses		Formalwear		Jewelry
☐ Oute	erwear 🔲	Pants		Shoes		Sleepwear
☐ Spec	cialty 🔲	Sportswear		Suits		Underwear
Unif	forms $\square$	Watches		Wedding		Work
			mo	<u>ore</u>	<u>su</u>	b-menus
Submit Thank	you. Cle	ar		Powered by	Sea	archeraft <sup>SM</sup>

FIG. 15B

The first term with the second of the second

Spare de Fall Source About U: A fall Grossource	the		queri	es. (click "sul	b-men			on the previous page. Choose enus of selected categories)
Shoes:		boy		girl		men		women
	V	athletic		casual		dress		elevator
		formal		work				
		boot		high heel		loafer		sandal
		slipper						
		brand name	s					
		price range	s					
					m	ore	<u>su</u>	<u>b-menus</u>
Submit		Thank you.		Clear		Power	ed by S	Searchcraft <sup>SM</sup>

FIG. 15C

A STATE OF THE STA

Add InfoSource

#### FIG. 16

4	
•	

Sestemenalisheme About Us	Add	Yo	ur	Site	As	An	Inform	nation	Sourc	:(
K.11.77.77.7										

	and allow users to search your up-to-the-minute database.						
Name:							
Company:							
Address:							
				· · · · · · · · · · · · · · · · · · ·			
Phone:							
Fax:	617-716-9875						
E-mail:	denise@delta.com						
What queries do you want sent to you?	✓ Send me every query.  ☐ Do not send me any queries EXCEPT those about: (choose the categories for queries) (click "sub-menus" to see the sub-menus of selected categories)  (For descriptions and other help, click here)						
	☐ Apparel	☐ Flow	wers & Gifts	☐ Movies & V	/ideo	☐ Toys & Games	
	☐ Books	☐ Foo	d & Drink	☐ Music		☐ Travel	
	Computers	☐ Hea	Ith & Beauty	Office		more categories	
	☐ Electronics	☐ Hor	ne & Garden	Sports & Fi	tness	sub-menus	
Choose One:	understand your responses.  ☐ I'll tell you now by filling in A, B, C, D, E, and F now.  ☐ I'll tell you later. I'll fill in A, B, C, and D now so you can contact me.  (click here for instructions)  The following inputs provide methods to query your site, to communicate, and to extract information from your response. For each set, choose the response corresponding to your site. (click here for further details.)						
	□ c/c++				☑ UF	T	
A. Language used	☐ Cobol		☐ Pascal		☐ VE	Script	
to query your site:	☐ Corba		☐ Python		☐ XML		
	☐ Java		☐ TCL		more		
B. Template of Query Language:	http://www.delta.com/cgi/getmethods						
C. Protocol used for sending to you:	☑ нттр 🔲 нтт	rps [	FTP 🗆 1	TCP/IP 🗖 e	-mail	more	
D. Protocol used for receiving from you:	☑ НТТР ☐ НТТ	TPS [	FTP 🗖 1	TCP/IP 🗖 e	-mail	<u>more</u>	
	□ c/c++		Pascal		☐ VE	Script	
E. Language used by your site to	□ csv		☐ Perl		☐ VE	BA	
respond:	□ Grep		☐ Python			/IL	
	☐ Java		☐ TCL		more		
F. Template of	<del></del>						
response langauge:			<del></del>	<del></del>	<del>.</del>		

Thank you.

Submit

Clear

#### Add InfoSource ftp/email

About Us Add tribbource

1

This page provides directions for sending your site information to us via either FTP or e-mail. (For more detailed instructions, click here)

	the body of your e-mail must be in text form and have lines that begin with a keyword followed by a hen followed by your information. The keywords are below.
Keyword	Description of information
Name	Your name, for contact purposes
Company	Your company
Address	Your mailing address
Phone	Your telephone number
Fax	Your facsimile number
e-mail	the e-mail address you want correspondence to go to
query categories	categories in which you want queries to be sent to you
method definition time	either "now" or "later". "Now" means you will fill in the rest of the fields, while "later" means you will tell us only how to query your site to contact you.
query language	One of the acceptable languages currently processed.
query template	A template in the above query language we can process to formulate a query to you
send protocol	One of the acceptable protocols currently allowed.
receive protocol	One of the acceptable protocols currently allowed.
response language	One of the acceptable languages currently processed.
parse template	A template in the above receive language we can process to parse a query received from you

Please send your file as the body of an e-mail message to infosource@searchcraft.com or ftp it to ftp.infosource.searchcraft.com.

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